

REMARKS

In an Office Action mailed March 5, 2010, claims 29-32, 38-42, 45, and 52-55 were rejected. Herein, claims 29, 31, 52, and 54 have been amended. No new matter has been added. Applicants respectfully request reconsideration and continued examination in view of the following remarks.

Initially, Applicants would like to thank the Examiner for indicating that claims 43, 44, 46-51, and 56 contain allowable subject matter.

I. Non-Compliant Amendment

Claims 41, 42, 49, 51, 53, and 56 have been provided with the “previous presented” status identifier. Accordingly, Applicants respectfully submit that each claim in the present application has been provided with the proper status identifier.

II. Claim Rejections under 35 U.S.C. 102(b)

Claims 29-32, 39, 40, 45, and 52-55 were rejected under 35 U.S.C. 102(b) as being anticipated by Maruyama (JP 2003-067969). Applicants respectfully request reconsideration of the above rejection.

Claim 29 recites, in part, a switching device that switches a reflection mirror between a deformed state and a non-deformed state using a magnetic force, the switching device having a hard magnetic member made of a hard magnetic material and a magnetizing unit including a magnetizing coil, that the hard magnetic member has a state in which the hard magnetic member is magnetized and a state in which the hard magnetic member is demagnetized, and the magnetizing unit is switchable between the state in which the hard magnetic member is magnetized and the state in which the hard magnetic member is demagnetized, and that the hard magnetic member applies a current through the magnetizing coil only when the reflection mirror is switched between the deformed state and the non-deformed state. The above-noted features of claim 29 are not disclosed, suggested, or otherwise rendered obvious by Maruyama based on the following.

Maruyama is directed to an optical pickup used for the optical recording playback in which a variable mirror 409 having a ferromagnetic substrate 409e is attached to a permanent magnet 426 via an arrangement of coils 427, and an electromagnetic force is generated by applying an electric current to the coils 427 in order to change the form of the variable mirror 409 (*See* Drawing 18 and [0036]-[0038]).

On page 3 of the Office Action, the Examiner states the following:

“By definition, a permanent magnet retains magnetism after being magnetized by electrical current. Maruyama discloses a deformable mirror able to change to flat, convex, and concave surfaces (see discussion in paragraph [0017]). In paragraphs [0036], [0037], and [0039], Maruyama further discloses applying “switchable current” and “current of different quantities” to the coils in order to deform the mirror to the desired shape. Maruyama also teaches that the direction of the current can be changed to achieve the desired surface. Since the permanent magnet retains magnetism after being magnetized by electrical current, in order for the mirror to change to either flat, convex, or concave after application of an electric current, the permanent magnet must be demagnetized.”

Applicants respectfully disagree that Maruyama teaches that the permanent magnet is demagnetized.

In this regard, paragraph [0036] discloses that “[i]f the respectively suitable current for each coil 427 is supplied from each drive circuit 428, each coil 427 will be opposed or absorbed by the electromagnetic force committed between the permanent magnets [sic] 426, and the substrate 409e and the thin film 409a will be changed. Moreover, paragraph [0039] discloses that “if the electric power switch 413 is replaced by the switch for change and power supply opening and closing, the direction which current flows into the coil 427 can be changed, and the shape of the substrate 409e and the thin film 409a can be changed freely.”

In other words, the shape of the variable mirror 409 is controlled by the supply or direction of current flowing into the coils 427. Applicants note that if the permanent magnet 426 was demagnetized, as suggested by the Examiner, a change of supply or a change of direction of current flowing into the coils 427 would not cause an electromagnetic force to act, and as a result, the shape of the substrate 409e and the thin film 409a would not be changed.

Accordingly, Applicants respectfully submit that Maruyama does not teach that the permanent magnet 426 can be demagnetized.

In contrast to Maruyama, claim 29 requires that the hard magnetic member has a state in which the hard magnetic member is magnetized and a state in which the hard magnetic member is demagnetized.

Further, as Maruyama does not teach that the permanent magnet 426 can be demagnetized, it would be necessary to apply constant electric current to the coil 427 to maintain the electromagnetic force needed to change/maintain the form of the variable mirror 409.

In contrast to Maruyama, claim 29 requires that the hard magnetic member applies a current through the magnetizing coil only when the reflection mirror is switched between the deformed state and the non-deformed state.

In view of the above, Applicants respectfully submit that Maruyama fails to disclose, suggest, or otherwise render obvious a reflection mirror and a hard magnetic member, as recited by claim 29. Therefore, claim 29 is patentable over Maruyama.

Further, claims 30-32, 39, 40, and 45 are patentable over Maruyama based at least on their dependency from claim 29.

Regarding claims 52 and 54, Applicants note that claims 52 and 54 have been amended in a manner similar to claim 29. In particular, claims 52 and 54 recite, in part, a switching device that switches a reflection mirror between a deformed state and a non-deformed state using a magnetic force, the switching device having a hard magnetic member made of a hard magnetic material and a magnetizing unit including a magnetizing coil, that the hard magnetic member has a state in which the hard magnetic member is magnetized and a state in which the hard magnetic member is demagnetized, and the magnetizing unit is switchable between the state in which the hard magnetic member is magnetized and the state in which the hard magnetic member is demagnetized, and that the hard magnetic member applies a current through the magnetizing coil

only when the reflection mirror is switched between the deformed state and the non-deformed state. Applicants respectfully submit that Maruyama fails to disclose, suggest, or otherwise render obvious these features of claims 52 and 54 for reasons similar to those discussed above with respect to claim 29. Accordingly, claims 52 and 54 are patentable over Maruyama.

Further, claim 53 is patentable over Maruyama based on its dependency from claim 52, and claims 55 and 56 are patentable over Maruyama based on their dependency from claim 54.

III. Claim Rejections under 35 U.S.C. 103(a)

Claims 38, 41, and 42 were rejected under 35 U.S.C. 103(a) as being unpatentable over Maruyama in view of Nishioka et al. (US 2006/0187563, hereafter “Nishioka”). Claims 38, 41, and 42 depend from claim 29. Applicants respectfully submit that Nishioka fails to provide disclosure that would obviate the above-mentioned deficiencies of Maruyama. Accordingly, claims 38, 41, and 42 are patentable over any combination of Maruyama and Nishioka based at least on their dependency from claim 29.

IV. Allowable Subject Matter

Claims 43, 44, 46-51, and 56 were objected to as being dependent upon a rejected base claim. Applicants respectfully request that the objection of claims 43, 44, 46-51, and 56 be withdrawn for reasons similar to those discussed above with respect to independent claims 29 and 54.

V. Conclusion

Claims 29-32 and 38-56 are patentable over the prior art of record.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the present application is clearly in condition for allowance. An early notice thereof is earnestly solicited.

If, after reviewing this Amendment, the Examiner feels that there are any issues remaining which must be resolved before the application can be passed to issue, it is respectfully requested that the Examiner contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

Akira KUROSUKA et al.

/Stephen W. Kopchik/

By 2010.06.07 11:36:17 -04'00'

Stephen W. Kopchik
Registration No. 61,215
Attorney for Applicants

SWK/DMO/lkd
Washington, D.C. 20005-1503
Telephone (202) 721-8200
Facsimile (202) 721-8250
June 7, 2010